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[redacted] log # 25 25X1

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Copy No. a of a-a

[redacted]

February 1, 1971

TRIP REPORT

To: John C.

From: [redacted] 25X1

Subject: Activity Summary
Facility Visit, Contract [redacted] 25X1

Reference: [redacted]2201201-AS-26 25X1

Date: January 27, 28 1971

On January 27, 28, 1971 [redacted] visited the sponsor 25X1
25X1 facility under Contract [redacted] for work on the OIM program.

Reference to the Program Schedule in [redacted]2201201-AS-24, 25X1 dated January 26, 1971 illustrates that planning was for OIM activity in the laboratory and effort towards specification of in-line complex filters. The work performed was primarily involved with OIM activity for system measurement, utilizing the [redacted] 25X1
25X1 [redacted] long-line resolution target at three different low contrast values, and a Kodak sinusoidal target at 30% modulation. Effort was also applied to determining system defocused quantities for specification of in-line complex filters. The latter direction is taken to design filters for coherent in-line filtering of operational material.

During the coming weeks we will reduce the data collected on this trip. We will also initiate edge trace analysis. How

Declassification Review by NGA/DoD

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emphasis will be placed on selecting operational imagery and processing the same.

Details of the laboratory effort are written-up in the lab notebook. Attached is the Program Plan for the week 1 February 1971, a copy of which was left with John C. on 28 January 1971.

PSC/c
Enclosures

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Program Plan

To John C.

25X1 From [redacted]

Subject Program Plan
for week starting 1 Feb., 1971

Date 28 Jan., 1971

(A) Measurement of System Response
The past two weeks have provided a definition of some boundary conditions for the OIM system and initiation of data collection for measuring the OIM response. 25X1 Data was collected on film using the [redacted] long-line resolution target (three targets differing in contrast) and the Kodak sinusoidal target at 30% modulation. This information should provide the data to characterize OIM system response to within tolerances specified by sensitometry, microdensitometry, and target characterization (information content).

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To continue in this direction and conclude with the resolution target and the sinusoidal target we should perform the following:

(1) Scan the targets through the central area, and determine their transmittance function.

(2) Scan the imagery through a central cross-section no more than 1 cm., and also the individual step wedges. Utilize the effective exposure hypothesis to determine the intensity function.

(3) Plot the following curves.

(a) Use resolution target data plot modulation vs. line frequency for the three contrasts and the three focus positions, a total of nine

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curves. Also, using data of the unprocessed imagery one can plot nine corresponding curves showing system response without filtering. The above data can be used to determine system response at and about best focus position. Another data plot of interest would be % of modulation increase over original input target vs. line frequen The above data should be analyzed and best presentation of response data should be determine e.g. % modulatin increase or comparison of processed wit

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unprocessed or comparison of predicted with measured? All three appear pertinent at this time and data is available with targets and films on hand.

(b) Use sinusoidal target data and plot processed and unprocessed modulation vs. frequency, and MTF taking into account input target information, and % modulation increase. As above, review the curves, their response change with focus plus ± 2μ about focus, perform a reasonableness test, plot data in preliminary manner and deduce final form for presentation.

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(B) Operational Target Processing Applications

This activity has not been pursued as heavily as desired because of the impetus on measurement. However we will compensate for this during the ~~next~~ following weeks. We have to emphasize target selection and obtaining dupe positives for work on the Lab OIM system. Therefore the following suggestion is made.

① Review with [redacted] the possibility of having [redacted] people provide information of source material 25X1 25X1

② Spend some time this week looking at, and obtaining some targets. Utilize [redacted] personnel in this portion also because it is essential for the OIM operation. 25X1

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(3) Utilize information obtained from Dennis R. to initiate definition of complex filters to compensate for operational cases of image blur and/or defocusing.

Using generated dupes we should perform OIM according to the heavy schedule previously outlined, on the order of 1½ days per week, for [redacted] personnel, 25X1
This should remain our primary task as we build up capability for coherent in-line complex filters.

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